

synApps love, vme, ebrick modules

EPICS Collaboration Meeting – Beamline Controls SIG Workshop

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Topics

- Synopsis of love, vme, EPICS brick (ebrick)
- Module directories

- Collaborative effort, list of some contributors:
 - Kurt Götze
 - David Kline
 - Tim Mooney
 - Mark Rivers
 - Marty Smith
 - Ron Sluiter

- Responsibilities...
 - Develop enhancements
 - Support, modifications, fault fixes
 - Coordinating and organizing releases (efforts from others)



Module directories

- Source code – record, device / driver support, libraries
- EPICS databases
- iocBoot
 - Startup scripts
 - Autosave request files
- MEDM display files
 - Commissioning and operating
- Documentation
 - For users and developers (IO map, manuals, PV naming)
 - How to build, configure, and deploy the software
- Examples



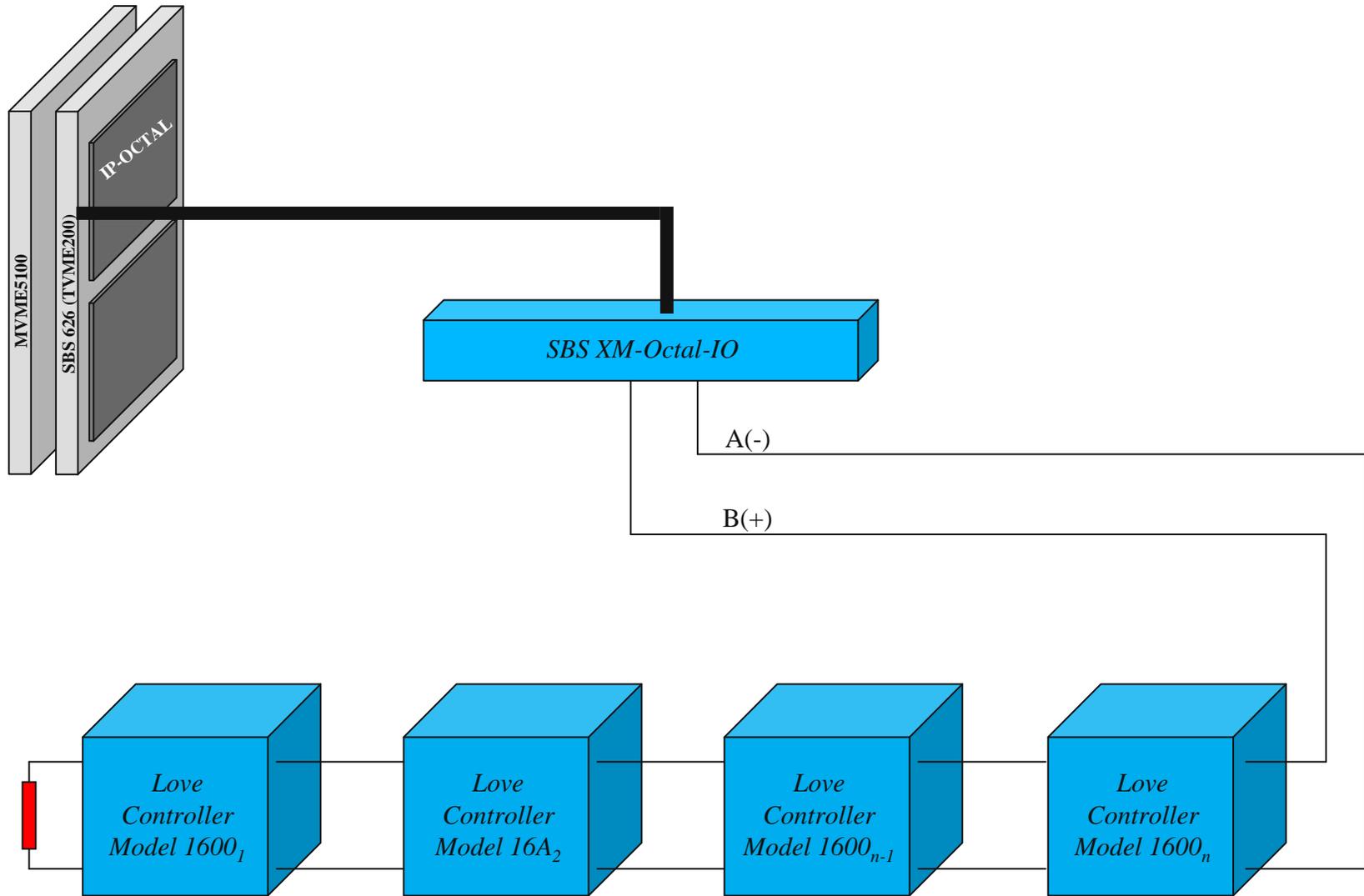
love module

- Love controller,
 - Instrument to measure voltage, current, pressure, or temperature
 - Support models 1600 and 16A
 - Communication is through 2-wire RS485
 - Works in VME and Linux environments (laptop, desktop, ebrick)
 - Only readback device
- Support
 - Asyn interfaces implemented
 - *asynInt32* - *ai*, *ao*, *longin*
 - *asynUint32Digital* – *bi*, *bo*, *longin*, *longout*, *mbbi*, *mbbo*
 - Standalone application is available
 - IP-Octal RS232 and RS485 modules can be used
 - MEDM screens for commissioning, diagnostics, operations
 - Current release B3-2-3 (late summer)
- Documentation
 - 1600 and 16A information, wiring diagrams, presentations



Love controller

love module – hardware configuration (RS485)



love module - MEDM screens



Hidden menu

Primary / operation



Diagnostics / control





vme module

- vme module
 - Current release R2-4-2

- Record support *vmeRecord*
 - Provides run-time access to VME bus (supported/unsupported)
 - Test and evaluate new hardware

- Device support
 - Acromag 9440 16-bit digital input/output
 - Acromag 9210 8 channel analog output (12-bit)
 - APS bunch-clock generator
 - Generic A32 VME interface
 - Heidenhain IK320 encoder/interpolator
 - HP 10895A Laser interferometer





vme module – supported hardware

- Device support, cont...
 - Joerger scaler
 - APS machine-status link (MRD100)
 - Varoc SSI encoder
 - VMI4116 16-bit D/A

- Driver support for VME hardware
 - Avme9210
 - Heidenhain IK320 encoder/interpolator
 - Varoc SSI encoder

- vmeTest application
 - Written by Frank Lenkszus
 - Menu driven, setup VME transactions
 - Interaction at the iocsh



vme module – MEDM screens

- MEDM screens
 - Acromag module
 - Bunch clock generator
 - IK320
 - Machine status link
 - HP 10895A
 - vme Record



ebrick module

- Newer module, available by request, synApps 5.2
- Low-cost IOC, PC104, soft real-time, localized control
- Hardware support
 - Diamond Systems (DSC) Athena
 - *Pentium III Eden processor, 660Mhz, 128MB*
 - *16 ADC @ 16bits, 4 DAC @ 12bits (-10V..10V)*
 - *24 digital IO bits, watchdog timer, 4 USB, IDE, 4 Serial, printer, VGA, mouse, keyboard, 10/100 Ethernet*
 - DSC Ruby-MM-416, 4 DAC @ 16bits, 24 digital IO bits
 - DSC Emerald-MM-8P, 8 RS-232/422/485 ports
 - DSC Onyx-MM, 48 digital IO bits
 - DSC Pearl-MM, 16 output relays
 - Sensoray Model 518 Smart A/D, 8 channel sensor



ebrick module - support

- Hardware support, cont..
 - OMS PC68/78 Motion Controller
 - MDrive,
 - Love controllers (RS485 converter)
 - XIA Huber slits
 - Kohzu monochromater
 - White beam slits
 - Generic Digital IO (Scaler)
 - Mass media: 40GB HDD / 2GB CF
- Standalone unit (no purple) or rack mountable



New hot



Old and busted

ebrick module - support

■ Software,

- Vector Linux STD 5.1, Slackware based
- Development tools, editors, CVS, TkCVS, X11, XDMCP, IceWM, NFS
- EPICS base 3.14.7, synApps 5.1, Probe, MEDM, IOC directories, databases
- Asyn-based driver support for hardware
 - *Digital IO asynUInt32digital – bi, bo, mbbi, mbbo*
 - *A/D and D/A asynInt32, asynFloat64 – ai, ao, longin, longout*
- MEDM screens
- Screen application (iocsh attach)



ebrick module – MEDM screens

The image displays three MEDM (Monitor Event Display) screens for the ebrick module. The first window, 'usaxs_ebrick.adl', shows a menu titled 'USAXS DEI IOC brq:' with options like 'Photodiode/Femto', 'Femto amplifiers', 'PZT motors', 'PF4 Filter', 'Digital IO', 'Analog Input', 'Analog Output', 'Placeholders', and 'Scans'. A red arrow points from 'Digital IO' to the second window. The second window, 'ebrickBitout24.adl', is titled 'JSAXS-Back-Panel-Femto-Control-Bits1-24' and lists 24 bit controls. Each row includes a 'Passive' checkbox, a label (e.g., 'Femto 1 Gain bit1'), a status indicator ('Off'), a mode indicator ('On'), and an 'Edit' button. A red arrow points from the 'Edit' button of the first row to the third window. The third window, 'ebrickBitinpedit.adl', is titled 'brq:rmm01:reg01:bo01' and shows a detailed view of a bit control. It includes a 'SCAN' button, a 'DESC' field containing 'Femto 1 Gain bit1', a 'ZNAM' field with 'Off', and an 'ONAM' field with 'On'.

Passive	DESC	ZNAM	ONAM
<input type="checkbox"/>	Femto 1 Gain bit1	Off	On



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Thank You

